

Application No.: 10/792,177
Inventor: HERNDON, Troy M.
Reply to Office Action of February 12, 2007
Docket No.: STL 3352

Amendments to the Claims:

The following Listing of Claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (currently amended) A method for designing a fluid dynamic bearing system, comprising:
determining a first stability ratio performance ~~characteristic~~ for a first journal bearing configuration having at least one or two sub-journal bearings;
determining a second stability ratio performance ~~characteristic~~ for a second journal bearing configuration having at least three sub-journal bearings, wherein each of the at least three sub-journal bearings provide radial stiffness; and
implementing the second journal bearing configuration if where the second stability ratio performance ~~characteristic~~ is improved relative to the first stability ratio performance ~~characteristic~~.
2. (canceled)
3. (currently amended) The method of claim 1 ~~claim 2~~, wherein each sub-journal bearing of the first configuration has a length equal to substantially one-half of a total journal length and each sub-journal bearing of the second journal configuration has a length equal to substantially one-third of the total journal length.
4. (previously presented): The method of claim 1, further comprising the step of determining a third stability ratio performance ~~characteristic~~ of a third journal bearing configuration.
5. (canceled)

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6. (original): The method of claim 4, wherein the first configuration comprises two sub-journal bearings, the second configuration comprises three sub-journal bearings, and the third configuration comprises four sub-journal bearings.

7. (original): The method of claim 6, wherein each sub-journal bearing of the first configuration has a length equal to substantially one-half of a total journal length, each sub-journal bearing of the second journal configuration has a length equal to substantially one-third of the total journal length, and each sub-journal bearing of the third journal configuration has a length equal to substantially one-fourth of the total journal length.

8. (Currently amended): The method of claim 1, wherein the first configuration comprises $2+N$ number of sub-journals and the second configuration comprises $3+N$ $N+1$ number of sub-journals.

9. (Currently amended): The method of claim 8, further comprising the steps of: determining a third stability ratio ~~performance characteristic~~ of a third journal bearing configuration, the third configuration comprising $4+N$ $N+2$ number of sub-journals.

10-21. (canceled)

22. (previously presented) The method of claim 1 ~~claim 21~~, wherein the ~~second performance characteristic is improved if the second stability ratio is greater than the first stability ratio.~~

23. (new) A method for designing a fluid dynamic bearing system, comprising:
determining a first stability ratio for a first journal bearing configuration having at least two sub-journal bearings;
determining a second stability ratio for a second journal bearing configuration having at least three sub-journal bearings, wherein each of the at least three sub-journal bearings provide

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radial stiffness; and

implementing the second journal bearing configuration where the second stability ratio is greater than the first stability ratio.

24. (new) The method of claim 23, wherein each sub-journal bearing of the first configuration has a length equal to substantially one-half of a total journal length and each sub-journal bearing of the second journal configuration has a length equal to substantially one-third of the total journal length.

25. (new) The method of claim 23, further comprising the step of determining a third stability ratio of a third journal bearing configuration.

26. (new) The method of claim 25, wherein the first configuration comprises two sub-journal bearings, the second configuration comprises three sub-journal bearings, and the third configuration comprises four sub-journal bearings.

27. (new) The method of claim 26, wherein each sub-journal bearing of the first configuration has a length equal to substantially one-half of a total journal length, each sub-journal bearing of the second journal configuration has a length equal to substantially one-third of the total journal length, and each sub-journal bearing of the third journal configuration has a length equal to substantially one-fourth of the total journal length.

28. (new) The method of claim 23, wherein the first configuration comprises $2+N$ number of sub-journals and the second configuration comprises $3+N$ number of sub-journals.

29. (new): The method of claim 28, further comprising the steps of: determining a third stability ratio of a third journal bearing configuration, the third configuration comprising $4+N$ number of sub-journals.

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30. (new) A method for designing a fluid dynamic bearing system, comprising:

determining a first stability ratio for a first journal bearing configuration having at least two sub-journal bearings;

determining a second stability ratio for a second journal bearing configuration having at least three sub-journal bearings, wherein each of the at least three sub-journal bearings provide radial stiffness;

determining a third stability ratio for a third journal bearing configuration; and

implementing the second journal bearing configuration where the second stability ratio is improved relative to the first and third stability ratios.

31. (new). The method of claim 30, wherein each sub-journal bearing of the first configuration has a length equal to substantially one-half of a total journal length, each sub-journal bearing of the second journal configuration has a length equal to substantially one-third of the total journal length, and each sub-journal bearing of the third journal configuration has a length equal to substantially one-fourth of the total journal length.

32. (new) The method of claim 30, wherein the first configuration comprises $2+N$ number of sub-journals and the second configuration comprises $3+N$ number of sub-journals.

33. (new) The method of claim 32, further comprising the steps of: determining a third stability ratio of a third journal bearing configuration, the third configuration comprising $4+N$ number of sub-journals.

34. (new) The method of claim 30, wherein the second stability ratio is greater than the first stability ratio.